

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior listings of claims in the application.

Listing Of Claims:

1. (Currently Amended) A device for minimally invasive, intravascular aortic valve extraction inside the aorta comprising:

a perfusion catheter having at least one perfusion channel designed as a hollow channel; and

at least two dilation units disposed at a distance from each other at the distal catheter region in the longitudinal extension of said catheter, both said dilation units being projected through by said perfusion catheter and forming, in an inflated state, an at least practically fluid-tight occlusion with the aortic wall,

wherein at least a dilation unit disposed on the proximal side comprises an elastic, inflatable material and is provided with at least one passage outside of said perfusion catheter,

wherein said at least one passage that projects through said dilation unit disposed on the proximal side and is completely surrounded by said dilation unit disposed on the proximal side and through which at least one auxiliary catheter can be introduced for aortic valve ablation in a fluid-tight manner, and

wherein ~~a sluice mechanism~~ the elastic, inflatable material of the dilation unit disposed on the proximal side seals said at least one passage fluid-tight without the provision of an auxiliary catheter when the dilation unit disposed on the proximal side is in an inflated state.

2. (Currently Amended) The device according to claim 1, wherein said at least two dilation units are balloon elements which are inflatable with a medium and are disposed at a distance of at least 1 cm from each other in the longitudinal extension of said perfusion catheter.

3. (Previously Presented) The device according to claim 1, further comprising at least one passage provided at the circumferential edge of said dilation unit disposed on the proximal side, and

wherein, when said dilation unit is in an inflated state, part of said at least one passage is bound sickle-like by said circumferential edge of said dilation unit and a remaining part of the at least one passage is bound by said aortic wall.

4. (Canceled)

5. (Previously Presented) The device according to claim 1, wherein said at least one passage is disposed in a rotatable manner about the perfusion catheter with the aid of a rotatable ring seal.

6. (Previously Presented) The device according to claim 1, wherein at least said dilation unit disposed on the proximal side is disposed in a rotary moveable manner about said perfusion catheter.

7. (Currently Amended) The device according to claim 1, wherein inside said at least one perfusion channel of said perfusion catheter a pump device is provided and wherein on the proximal side to said dilation unit disposed on the distal side an opening is provided through which a blood flow enters said perfusion catheter and exits said perfusion catheter on the proximal side at an opening.

8. (Currently Amended) The device according to claim 1, wherein said dilation unit disposed on the proximal side is provided with two passages for fluid-tight introduction of a coronary perfusion catheter provided at ~~[[the]]~~ a circumferential edge, each coronary perfusion catheter provided at a distal end with a dilatable cuff,

wherein at least three further passages are provided in said dilation unit disposed on the proximal side, of said three further passages one serves for introducing an

ablation instrument, another for introducing an observation and/or rinsing unit, and a third one for introducing a drainage,

wherein said at least three further passages project through said dilation unit disposed on the proximal side and are completely surrounded by said dilation unit disposed on the proximal side.

9. (Previously Presented) The device according to claim 1, wherein said perfusion catheter is provided with a working channel having an outlet opening in the region between the two dilation units through which at least one auxiliary catheter can be introduced for aortic valve ablation.

10. (Currently Amended) The device according to claim 1, wherein said at least one passage ~~is surrounded by an elastic channel~~ forms a tube whose channel walls ~~lie close together~~ snuggle to each other in a fluid-tight manner in an inflated state and are pressed apart in a fluid-tight manner when an auxiliary catheter is introduced.

11. (Previously Presented) The device according to claim 1, wherein said dilation units are connected each to a supply line through which a medium is introduced for inflating.

12. (Currently Amended) The device according to claim 1, wherein said dilation units are designed as suction elements which can be inflated with a medium and which have a bell-shaped ~~[[form]]~~ cross section into whose ~~[[semi]]~~ half-open bell interior a suction line runs.

13. (Currently Amended) The device according to claim 12, wherein said ~~bell-shaped form of said suction elements is made of~~ suction elements comprise a double-walled tube structure made of an elastic material ~~which is designed double-walled~~ and encloses an inflatable volume.

14. (Currently Amended) A method for minimal-invasive, intravascular aortic valve extraction inside the human aorta comprising:

introducing a coronary artery perfusion catheter having a perfusion channel into the right coronary artery and another perfusion catheter into the left coronary artery and inflating a cuff provided at each coronary artery perfusion catheter respectively, with a blood flow being ensured through said coronary artery perfusion catheters into the coronary arteries,

intravascular introducing a perfusion catheter which is provided near its distal end with two dilation units disposed at a distance from each other,

positioning said perfusion catheter inside the aorta in such a manner that the aortic valve is surrounded on both sides inside the aorta by said dilation units,

inflating both of said dilation units in such a manner that said dilation units lie close to the aortic wall in a fluid-tight manner,

emptying the blood volume inside said two dilation units by introducing at least one auxiliary catheter outside of the perfusion catheter and projecting through said dilation unit disposed on the proximal side to create a working volume, and

severing the aortic valve inside said working volume by introducing at least one cutting instrument projecting through said dilation unit disposed on the proximal side,

wherein the dilation unit disposed on the proximal side is provided with at least one passage outside of said perfusion catheter,

wherein said at least one passage projects through said dilation unit disposed on the proximal side and is completely surrounded by said dilation unit disposed on the proximal side and through which the at least one cutting instrument is introduced in a fluid-tight manner,

wherein an elastic, inflatable material of the dilation unit disposed on the proximal side seals said at least one passage fluid-tight without the provision of the at least one cutting instrument when the dilation unit disposed on the proximal side is in an inflated state.

15. (Previously Presented) A method according to claim 14, wherein said severing of the aortic valve is conducted under optical observation by an optic catheter whose distal end projects into said working volume.

16. (NEW) A device according to Claim 1, further comprising at least three passages in said dilation unit disposed on the proximal side, wherein said at least three passages project through said dilation unit disposed on the proximal side and are completely surrounded by said dilation unit disposed on the proximal side.

17. (NEW) A device for aortic valve extraction, comprising:
a device according to Claim 1; and
an ablation instrument in said at least one passage.

18. (NEW) A device for aortic valve extraction, comprising:
a device according to Claim 16;
an ablation instrument in a passage projecting through said dilation unit disposed on the proximal side and completely surrounded by said dilation unit disposed on the proximal side;

an optical observation catheter in a passage projecting through said dilation unit disposed on the proximal side and completely surrounded by said dilation unit disposed on the proximal side;

a suction line in a passage projecting through said dilation unit disposed on the proximal side and completely surrounded by said dilation unit disposed on the proximal side; and

a rinsing line in a passage projecting through said dilation unit disposed on the proximal side and completely surrounded by said dilation unit disposed on the proximal side.